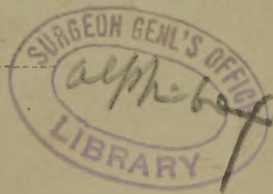


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A GLANCE
AT
THE FEVERS
OF THE
MONONGAHELA VALLEY,
BY JNO. S. VAN VOORHIS, A. M. M. D.
OF BELLEVERNON, PA.



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TO THE MEDICAL PROFESSION
IN THE MONONGAHELA VALLEY,

THE FOLLOWING ESSAY IS RESPECTFULLY DEDICATED

BY THE AUTHOR.

FEVERS OF MONONGAHELA VALLEY.

To the student of nature and physical science, the Monongahela Valley affords wide-spread and interesting fields for observation: Its calm and beautiful stream, winding its way smoothly amid lofty mountains; its valuable and inexhaustible coal and limestone formations; its lofty oak and beautiful cedar; its medical and general topography; and its general and peculiar diseases, all conspire to render it an object worthy the attention of the most grasping mind.

The Monongahela Valley is geographically situated between 39° and 40° of north latitude. It takes its rise in the mountains of Western Virginia, and extends to the city of Pittsburgh, where the junction of the Monongahela and Allegheny rivers forms the beautiful Ohio. It is bounded on the East by the Allegheny range of mountains, on the West by the ridge which divides the Monongahela from the Ohio basin; in short, it includes all that territory whose streams empty themselves into the Monongahela river. The Valley includes within its limits the greater portion of the Counties of Monongalia, Marion, Harrison, Upshur, Lewis, Taylor, Barbour, Randolph and Preston, in the State of Virginia, whose aggregate population, in 1850, was 80,000; and the Counties of Greene, Fayette, Washington, Westmoreland and Allegheny, in the State of Pennsylvania, whose population, in 1850, was about 300,000. Within the limits of the Valley we find the native of almost every nation and climate; though the great majority are descendants of English, German and Irish. Here we find the brave and robust native of the Old Dominion—the stalwart miner from Wales, whose milk consists of “ale and gin!”—the dusky yeoman from the Germanic States—the fair-skinned native of the “Emerald Isle;” and occasionally we meet with one whose “home” is beautiful and sunny France. The character of the people, generally, is sober, industrious and healthy.

The principal geological formations consist chiefly of sand-stone, iron ore, bituminous coal, and limestone; the characteristic formation is, beyond all question, the coal and limestone. To show something of the vast extent of this formation, we will quote an extract from a report of Prof. Rogers, on a geological survey of the State of Virginia: Speaking of the main seam of the upper group of coal, he says—“Considering its thickness and the quality of the coal, as well as the extensive area over which it is spread, and the facility with which it can be mined and conveyed to market, this is unquestionably the most valuable seam in the coal measures, either in Virginia or Pennsylvania. By careful tracings, conducted in both States, this seam, extensively expanding in the Valley of the Monon-

gahela, from a point some distance above Clarksburgh to the State line, has been shown to be identical with that which is so largely developed in the northern part of the same Valley, in its prolongation in Pennsylvania, and which is so extensively disclosed in the vicinity of Pittsburgh." From a summary prepared by the same distinguished geologist, we learn that the entire thickness of the coal measures is estimated at about forty feet, and the limestone about seventy-five feet.

In speaking of the geological formations, Dr. Marshall, of Allegheny, Co. says—"M'Keesport is in about the centre of one of the most extensive coal basins in the United States, embracing the Valleys of the Monongahela, Youghiogheny, Ohio and Big Beaver rivers. The Valley of the Big Beaver is estimated to contain 3850 square miles. The Valleys of the Monongahela and Youghiogheny must be at least equal to it; consequently there must be in said basin 7700 or 8000 square miles of bituminous coal. The Monongahela river, at low water mark, is at Brownsville 850 feet above high tide in the Chesapeake Bay.

"The coal strata, at M'Keesport, is 315 feet, and the apex of the hills 435 feet above low water mark; consequently, the hills, with the apices tipped with limestone, have at this place an elevation of 1260 feet above the Atlantic Ocean. The balance, with the exception of the coal, is sandstone formation. This elevation, with the hilly aspect of the country, and the rapid descent of the creeks and rivers, causes this district to be the driest climate, probably, of any section of the United States of the same latitude. This Valley has an abundance of good water, especially the eastern end of it. On the north side of the river, from the mouth of Peter's Creek, as also on the south side from the mouth of Turtle Creek, to the city of Pittsburgh, there is scarcely any limestone; therefore, most of the springs above, as all below the coal, have soft water."

Dr. McConaughy, of the Youghiogheny Valley, says—"Our geological formation, I presume, is similar to that of your river. We have, however, a more swift and clear running stream, with perhaps fewer bogs, marshes and stagnant pools of water in its vicinity, producing malaria. The soil is generally of a heavy limestone nature, of luxuriant production, when well cultivated. Beneath is alternate layers of limestone, slate, strata of fine building stone—four foot vein of coal, yellow slate and black—six to eight feet of coal, and beneath this slate and rock fossil depositions of various kinds."

Thus we can form some estimate of the extent of the coal and limestone with which nature has so richly endowed the Valley, and the vital influences which they must exercise over the wealth, health and happiness of the people. We have not been so fortunate as we desired, in obtaining data from which to form an estimate of the laws which exist between the geology of certain districts and their diseases. That geological formations exercise a decided influence over disease, is a fact that no one in this scientific age will dare deny, and a subject to which the attention of the Profession is now being turned. We know not of a single monograph written on

the fevers of our Valley; in fact, we are acquainted with no section of country in which there has been manifested so little spirit of investigation and research in medical subjects, and few portions of our State present so many facilities for medical enquiry.

At the very threshold of our subject we encounter a very serious difficulty, which the science of ages has failed to eradicate. It is simply the definition of the term fever. "The difficulty," says Dr. Dickson, of Charleston, S. C. "of presenting correct definitions has always been acknowledged by the scientific pathologist. Description is far easier; yet even the most graphic portraiture of diseases has been found insufficient for the purpose of clear diagnosis, and complaints are universally made on this subject. The truth of this familiar remark is perhaps most strikingly exhibited in the numerous discussions concerning the forms, types and varieties of fever."

"In reality," says Dr. Good, "no writer seems to have been fully satisfied with his own definition; and it is not extraordinary, therefore, that he should seldom have given satisfaction to others,"

"Fever," says Fordyce, "is a disease which affects the whole system; * * * * *it does not, however, affect the various parts of the system uniformly and equally, but on the contrary, sometimes one part is more affected than another.*"

"Fever," says Copland, "is but one disease."

Dr. Fordyce has no doubt approximated nearer than any to a true definition, but falls far short of giving a clear portraiture of the disease. We all must acknowledge the inadequacy of our language in defining a disease with which we are so familiar, and about which so much has been said and written. The term fever seems merely to be a conventional signification of a peculiar diseased state of the system, characterized by a certain train of symptoms, more or less modified by remote causes, locality and idiosyncrasy. We are familiar with the morbid phenomena in such a case, but fail in making out a true definition. Owing to this fact, and our ignorance of etiology in relation to fevers, we meet, here as well as elsewhere, with very many difficulties in their nosology and terminology.

These difficulties have partially given way under the simplicity which our time is striving to give to all subjects, and thus have cast aside many of those burdensome superfluities which confused in mystery the writings and works of the ancients. No where is this principle more practically illustrated than in the changes which have taken place in our Valley respecting the terminology of fever.

Within our own recollection, we have had almost an endless catalogue of unmeaning and indefinite epithets applied to our fevers; such as Typhus Mitior and Gravior, Bilious, Remittent, Intermittent, Fever and Ague, Inflammatory, Nervous, Black and Red Tongue, Brain, Congestive, Breakbone, or Dengue, *Log-house* &c. terms for the most part derived

from some prominent symptom or locality of attack, rather than any correct knowledge of their true pathology.

Such has been the result of scientific pruning in these latter days, that we have settled down quite generally into the wise conclusion, that there exist only two species of fever, native to the Monongahela Valley. We are of the opinion and we are not alone, that periodical with its varieties Remittent and Intermittent fever, and continued in the form of Enteric or Typhoid fever, are the only characters which the idiopathic fevers assume in our Valley.

We have discarded the term Typhoid and adopted the word Enteric, as proposed by Dr. Wood and others, from the conviction that this disease is seated in the intestinal canal, and especially in the glands of Peyer and Bruner and Mesentery glands, clearly indicating in its name, the location of the affection. Dr. Drake, in his great work on the principal diseases of the interior of North America, has classed Remittent, Intermittent, Congestive, etc. under the title of Autumnal, from a conviction based on his own vast experience; such an epithet is not true respecting the territory of which we are now speaking, since we have as much periodical fever in one season of the year as another, it is absolutely no respecter of season, which truth *per se* would render such a term unmeaning and erroneous. Typhus rarely, and Yellow fever never occurs native in the valley; this assertion is true beyond all question relative to Yellow fever, and in regard to the former some may entertain views different, which we shall attempt to controvert. The Red and Black Tongue fever, which first appeared in 1846, and prevailed so extensively in many parts of the Valley, is now acknowledged to be nothing more or less than Enteric fever, such peculiar conditions of the Tongue being among the many symptoms of that variety of fever. This needs no further evidence than the fact, that such terms have become obsolete.

It has been asserted by some that Dengue or Breakbone fever has had an existence in the Valley; even if such should be the case, our position would remain the same, since this form of disease is not considered an idiopathic fever, but derives its name from a singular variety of Rheumatism which "prevailed in 1827-28 in the West Indies," and more recently in some of the Southern States, and in no place was it regarded as a form of Idiopathic fever.

Dr. Drake has unquestionably settled the fact that Remittent, Intermittent, Congestive &c. are mere varieties of periodical fever, or as he denominates it, Autumnal, and considers them the offspring of one and the same remote cause, and when no special variety is in view, should be designated by the same epithet.

The Profession, here as elsewhere, is yet in the dark respecting the remote cause of any form of fever; that different causes operate in producing different species of fever, all will confess; but in what these consist and how they operate in bringing about such a disease we are yet in total igno-

rance. It is the opinion of Dr. Drake, and many other learned authors, that distinct remote causes operate in the production of the two species of fever, and refer the species Periodical to the effect of the same remote morbid cause, the varieties being the result of a greater intensity of action of the same remote cause. On this subject, there is a diversity of opinion in the Valley. "I think says Dr. Marshall, of M'Keesport, the Remittent fevers of this district are attributable to a variety of causes." "In my humble opinion," says Dr. Robinson of West Newton, "a variety of causes conduce to the fevers of our country." He has not made a distinction between the forms of fever, consequently we conclude he occupies the position, that a variety of causes operate in the production of the different fevers.

Individually, we are forced to the conclusion, and shall endeavor to demonstrate our position more clearly, as we pass on, that different remote causes originate the fevers of the Valley, in question. Prof. Mitchell of Philadelphia, of late has made a most scientific effort to settle the long disputed subject, by referring all fevers for their remote cause to a cryptogamous origin. No one can peruse his little book, without admiring his great profundity of thought, his deep ratiocination, and argumentative ingenuity, with his vast array of facts which a long experience has enabled him to command; yet he has failed to give general satisfaction to the great mass of the Profession at home or abroad. Many other distinguished men of both hemispheres have labored most assiduously to assign to all fevers one common origin, but likewise have failed.

So far as we are informed, the Profession here are universal in the opinion that Remittent and Intermittent fevers are the result of the influence of malaria, in whatever it may consist, but that Enteric or Typhoid is attributable to the effect of some local cause, dependant on some peculiar locality in which exists at certain times a *nondescript* subtle poison of whose intrinsic nature we are totally ignorant. It is a source of regret, that our Profession have so much neglected, the collection of statistics and other information, touching the character of the many epidemics that from time to time have occurred in the Valley, as such would have constituted an invaluable source of facts, to any one who desired to advance true science.

To illustrate our position of different causes, we insert from memory the facts of an endemic of enteric fever, which occurred in a district in which it had never existed before, except sporadically. This happened in the Autumn and Winter of 1848-49, and numbered about twenty-five cases, all of whom had been accustomed to use water from one well.

So striking was this fact, that it attracted the attention of the *vulgus populi*, and convinced them of the necessity of a perfect abandonment of the use of the water; and as soon as the well was cleansed and the water purified, they returned to its use with perfect impunity, and the fever ceased its ravages. In the same vicinity, a few persons, who were not in the use of the water, were the subjects of Remittent fever. Here undoubtedly, we had the existence of two species of fever, and beyond question dependent on

different causes. If not, why did not there exist Remittent as well as Enteric fever, among those who used the water from the same well? Or since Remittent fever prevailed among those not using the water of that well, why did not Enteric fever also attack persons in the same locality? Or, admitting for the sake of argument, the influence of one cause only differing in the intensity of its action, when attacking different individuals, why had we not both species of fever in that vicinity; since it is scarcely probable, that the cause, if *unique*, would be so uniform in its operation as to induce through the whole endemic, but one species? This mode of reasoning would result in assigning to the human constitution, an invariable susceptibility of disease, and a uniform action of remote causes in the production of morbid changes, which is not carried out by experience or to be inferred from any system of true philosophy.

We cannot account for the phenomena in question more rationally or satisfactorily than by assigning to them the agency of more than one distinct, remote, morbid cause.

After these preliminary reflections, we are prepared to deduce and illustrate the following propositions:

1. More than one cause of fever may operate on the system at the same time.
2. A change of species is the result of the action of different causes.
3. Change of variety is the effect of a more intense action of the same cause.

Every careful observer of our fevers must have noticed the remarkable difficulty which obtains, when first called to examine the symptoms in many cases of fever, in their formative stage. He often is at a loss in making out at once a true diagnosis, owing to the exhibition of a train of mixed symptoms; many being peculiar to each species of fever, while others are common to both. After some reflection, he ventures an opinion as to the character of the disease about to set in, its probable duration, and termination; which opinion he is sometimes compelled to contradict; that which he declared was an approaching remittent has really resulted in enteric fever. Such cases are becoming more common than formerly, which we attribute to the predominating influence of that process of action which gives rise to enteric fever. In fact, at this day all our fevers have a strong tendency to assume that form.

These cases are perplexing to the medical attendant, and in some instances may unjustly bring discredit on his professional attainments. Or, if the case be an aggravated one, perhaps counsel is solicited on the part of the patient or his friends, who, possessing very acute powers of discrimination, may pronounce a different opinion, which in the end may prove correct, much to the mortification of the attending physician. Or, the attending physician being of a candid and precautions temperament, will acknowledge openly and honestly, that in the prodromic stage of the disease it is not possible at all times to form a correct diagnosis, much more to estimate

the prognosis, owing to the mixed character of the symptoms; then the patient, in ignorance, calls another, who, with unwarranted rashness, pronounces at once on the case, "hit or miss;" which may possibly prove true; or, if not, he palms on the uninformed the *vague idea*—"the fever has changed its form"—and thus conceals his ignorance in the patient's folly. Cases of this kind fall under the observation of every practitioner in the Valley; and yet how few pause for a moment to consider their true character, which, if explained to the patient or his friends, might save a vast deal of anxiety, and afford ample opportunity for the physician to make out a correct opinion.

These difficulties must all be assignable to the operation of certain causes; the most satisfactory solution of which we received first from Dr. W. W. Gerhard, of the Pennsylvania Hospital, who in a clinical lecture to which we had the pleasure of listening, in September, 1850, took occasion to refer to this very subject, and accounted for these strange phenomena, by considering them the result of different causes operating on the system simultaneously. On this subject Dr. Dickson remarks—"Causes of different kinds may co-exist; when they resemble each other, their effects or influences are readily *blended*, and mingled, and interchanged, as one or the other may predominate: when dissimilar causes co-exist, they may sometimes act together, but not often; may sometimes blend their influences, but not readily or freely; they may possibly supercede each other by substitution; but in no imaginable instance can the effect of one cause be the effect of another and dissimilar cause. The records before us present numerous examples of the blending of types of fever—the intermingling of characteristic features. This is a phenomenon by no means rare; it is for the most part easily explained, and the co-existence of more than one cause may usually be indicated to account for it."

Thus we have sufficient authority for our conviction, that all these difficulties in diagnosis may be rationally and beautifully silenced, by the adoption of that position which refers them to a struggle for predominance in the system between the symptoms of enteric and periodical fever; and when the disease has become fully established, the weaker cause has given way to the stronger: and this is the point for which we should await ere we venture a positive opinion.

Our next proposition is embraced in the common remark, "That the fever has changed its form." This is often the result of false diagnosis; and to shield his ignorance in such cases, the attending physician is constrained to palm on the people the false impression, that the fever has turned typhus or as in modern times Typhoid, when really it had been so from the onset of the attack; in many cases, however, the change is a true one, and is referable to the fact, that two causes have been affecting the system. "There are also," says Dr. Dickson, "abundant instances, related upon sufficient authority, in which one form or type takes the place of another which has preceded it."

Dr. Wood says, on this point—"Or the disease may commence as continued fever, may after a time become paroxysmal or remittent, and may finally end in intermittent;" or, as he says in a former paragraph, it may commence a periodical and assume a continued form of fever. In opposition to such high authority, Dr. Marshall says, he has never yet seen a fever which he thought had changed its essential characteristics from one type to another. In cases of this change, the weaker cause has given way, but still exists, and if the system is again rendered pervious to its influence, it may ultimately work out a change in its course.

To illustrate our position: A person is attacked in a malarious district, with enteric fever—is running its course under appropriate treatment—the system is growing weaker—the cause of the existing fever, having performed its part, is becoming more inert, while the malaria remains the same—the system gradually losing its sympathy for enteric, while it retains in full force the same for periodical fever—at length the malaria triumphs, and then a well marked case of periodical fever takes the place of the former; or, if there be not a complete victory, there results a mixed fever, partaking of both the enteric and periodical, as is evident from the irregular rigors, intermissions, or remissions, and at other times exacerbations and characteristics of enteric fever. On this point, as on many others, there is a diversity of opinion; but as far as we are informed, they are generally of opinion that such cases do exist. "We have met with some cases of what might be called 'mixed fever,'" says Dr. Robinson, of Westmoreland County. "I have met with fevers often blended or mixed," says Dr. McConaughy.

As an instance of change of species, we will cite the case of Mr. A. whose case we specially noticed, as it fell under our observation. He was attacked with undoubted enteric fever, with all its peculiar features, which was somewhat prolonged, but seemed in a fair way for convalescence; when suddenly its wonted course was interrupted by the onset of rigors, high fever, and consequent perspiration, presenting, in a word, a well marked case of intermittent fever, which yielded readily, after some preliminary preparation, to small doses of the Sulphate of Quinine.

In illustration of a mixed fever, we cite the case of a lamented brother, whose truly singular disease at that time defied the skill and acumen of the most experienced. On Sunday, Feb. 14, 1848, he was attacked with congestion of the liver, accompanied with febrile manifestations of no peculiar type, until the subsequent Friday, when his symptoms assumed a form resembling the intermittent variety of periodical fever; at times changing to a typhoid or enteric, then mingled with periodical symptoms; and thus running a course characterized by no regular train of phenomena, until death closed the painful scene.

Such facts as these cases present, and others similar, are worth volumes of theoretical speculation, in arriving at a definite conclusion respecting those difficulties concerning which we are now treating; and in the absence

of a more satisfactory and definite mode of explanation, we cannot well discard this one, which is so reasonable, and one which can command so many facts to bear upon the conclusion.

In support of our last proposition, we have high authority. "Bilious remittent fever," says Condie, "is closely allied in its nature, the localities in which it prevails, and in many of its phenomena, to intermittent of which, by many, it is considered as a mere modification." "A more intense operation of the same morbid cause," says Brown, "required for the production of intermittent, engenders remittent, and the more violent the latter, the more remote is its character from that of intermittent; or, in other words, the less perceptible the remissions." This he proceeds to prove 'by the circumstances, that when periodical fevers are prevailing in certain countries, the permanent residents are often observed to have the disease in the form of ague only, and the mortality among them is small; but strangers, unhabituated to the climate and its diseases, suffer from remittents, with a proportionably greater loss of life. In more sickly seasons, remittents will be the prevailing form among both classes of persons; but strangers are more violently affected, and the mortality among them is greater. Its affinity to intermittent is shown, too, by the tendency which it has to pass into that form, and inversely, by the proclivity of ague to assume the remittent type." "Miasmatic remittent fever," says Dr. Wood, "is essentially the same disease as intermittent. The two affections sometimes approach each other so closely in form, that it may be impossible, in relation to a particular case, to decide to which of them it belongs."

Intermittent fever is of rare occurrence in our Valley, especially native cases; so that our opportunities for observation are very limited. In the town of Buchanan, on the Upper Monongahela, according to Mr. White, neither remittent nor intermittent fevers occur. The venerable Dr. Williams, who had resided in Clarksburgh forty-seven years, assured Dr. Drake, "that fever and ague had never prevailed through that long time, and had scarcely ever occurred, sporadically, in the town or vicinity." In Kingwood intermittent fever is almost unknown. Dr. Fetter, of Smithfield, in five years has seen but one case. "In Uniontown," say Drs. Campbell and Fuller, "intermittent fever is nearly unknown." "At the Fairchance Iron Works of Mr. Oliphant, seven miles south of Uniontown, near the base of the mountain, intermittents among the operatives were never thought of." "At Brownsville, Drs. Stanly, Lafferty and Jones, in periods of fourteen, eleven and four years, had never seen a case of fever and ague, until after the construction of locks and dams on the Monongahela river." Dr. Biddle, of Monongahela City, has met with only a few cases; and Dr. Porter, of Westmoreland County, in forty years, can recollect of but a single case. We have met with not a single case, in a practice of near seven years, and only one case of remittent, which assumed the intermittent variety, and we accounted for that rare case in the modification of the malaria by a certain locality, in which, by the operation of cer-

tain unknown agencies, this poison was either increased or diminished, so as to affect the variety of the fever. Whether it requires the more intense action of the malaria for the production of remittent, or *vice versa*, we are not prepared to say, but leave this matter in the hands of its friends to make out more clearly.

We cannot well see how it can be plausibly maintained, that two or more causes produce our remittents, and the very few intermittents with which we meet; or else, why are they so rare, or what is there which in this Valley so modifies the cause as to render it dormant, except in rare instances? But we can rationally suppose that the cause of periodical may sometimes be so influenced by peculiarities of locality as to produce ague at one time, and remittent fever at another; and thus more definitely account for the very few sporadical cases that happen in our Valley.

We meet with but few cases in our Valley uncomplicated with local lesions; and we are almost persuaded that any form of fever is very rarely independent. In remittent we find functional or organic derangement of the liver, stomach, brain, &c. and whether these be primary or secondary, remains yet *sub lite*; but one thing we do know, that when these derangements are removed the fever ceases to commit its ravages. We have never met with a single case of remittent fever, independent of local disease.

In regard to intermittent fever this doctrine is no less true. We recognise in the sallow countenance, icterode eyes, and bile-tinted urine, the effects of diseased liver. We see in the voracious or morbid appetite, &c. the result of functional or organic derangement of the stomach; in a word, in this disease we have more or less involved the whole chylopoetic apparatus; and in our treatment of both of these affections, we must have direct reference to those lesions, if we would remove the disease rapidly; "*tolle causam cessat effectus.*"

The treatment of remittent fever consists simply in correcting the morbid condition of the deranged organs. Should the liver be disordered, it can best be rectified by calomel, or calomel in combination with ipecacuanha. If much tenderness exist over the epigastric region, it can be removed by the application of sinapisms or blisters. The tongue is a good criterion by which to judge of the condition of the stomach and liver, and will assume its normal condition so soon as the disease is removed. If there be congestion of the brain, it can, in addition to the means already mentioned, be removed by cold applications to the head, in the form of iced water, and the use of the most powerful revulsive agents, as sinapisms to the extremities and blisters to nape of the neck. In our first experience we followed the *verba magistri* practice, but soon discarded its numberless powders and nitre drops for a more satisfactory plan as above stated. The old mode, of attempting to break the fever by an endless series of doses of nitrous powders, &c. has quite generally been discarded, by substituting the removal of the seat first, instead of the symptoms.

We abhor, reject, condemn and disapprove of that murderous course of

treatment which consists in the Thompsonian decoction of the patient in fiery draughts of Capsicum, Lobelia, Ginger, Number Six, *et id genus omnes*; for such a system of practice is worse than the ravages of the most frightful disease. A few medical men in the Valley, are still willing to leave periodical or any other fever, run its usual course of twenty-one days; this course from present indications is soon destined to sink into its merited oblivion. When all the different organs appear to have returned to their healthy attitude, and remissions still exist, they can most readily be counteracted by the use of small doses of the sulphate of Quinia. This modern mode of treatment needs no more recommendation, than its most satisfactory and salutary results.

The treatment of Intermittent fever is based upon the same general principles. First, correct the disordered condition of the liver, stomach, &c. which generally can best be accomplished by the administration of emetics, mercurial purgatives, pushed even at times to salivation, and and when local lesions are all removed, it is an easy matter to remove the paroxysms by small though repeated doses of the Sulphate of Quinia, which in such cases is almost a specific.

We here have but little difficulty in successfully treating fever and ague, because its cause exerts so little influence in reproducing the paroxysms when once subdued. Much different is the case in an extremely malarious district. When the cause is in full activity and the system thoroughly renovated by medicine, it appears that it is more susceptible of its poisonous influence, and consequently relapses are more apt to occur. This tendency to relapse, can be effectually guarded against by continuing the Sulphate of Quinia in small doses for twenty-one days, at which time the vital powers have so far regained their strength as to be capable, *per se*, to defy the effects of the malaria, unless some local lesion should again render those powers feeble. But after all we must confess that no invariable plan of treatment can be laid down for all cases, since contingences may arise which will necessarily modify any course of practice, we must rely on our knowledge of pathology and the therapeutical indications of the individual cases, else we will soon run in to an unhappy routine which will fail to give satisfaction to the patient or the physician.

We have asserted already, that Typhus fever rarely occurs native in our Valley. On this point there is still a diversity of opinion, but the spirit of the present, is strongly indicative of the gradual adoption of the views of M. Louis, and the French School generally; and some even contend that there is a distinction between Typhus and Enteric, and are of the opinion that both have an existence in the Valley.

If we follow the English School, who contend for the identity of Typhus and Enteric fevers, then we admit, that Typhus frequently obtains in our Valley, but if we adhere to the wise conclusion of the French faculty, we will have to search diligently for it among technical phrases or *verba magistri* notions; and we are unwilling to admit that both these forms of fever have ever happened epidemically. On this point, Dr.

Marshall, says, "I consider, that the Typhus and Typhoid fevers of authors are one and the same disease, being of different varieties.

"During many years of my life, both before and since I studied medicine, I witnessed the disease as it appeared in the Valley of the Connecticut river, and was acquainted with a great many practising physicians, but never yet saw one who claimed, that he could recognise any such difference. It is true though at that time Louis had not published his work on the lesions of the elliptical plates or Peyer's glands. How far his observations have been sustained by English and American Physicians is difficult to say. It should, however, be borne in mind, that a Frenchman's inclination to theorise often leads him to make discoveries which seem to harmonise with his pre-conceived theories; but which in due time are known only as the things that were. "We have only to revert back a few years in medical history to see how prevalent in Europe was Broussais' theory (founded on supposed facts,) of gastro enteritis, and if the results of such discoveries, shall not prove more practical than they have heretofore done, it behooves us to be cautious how we give credence to them; witness, for instance the case of the great Cuvier, who died sitting in his chair from the effects of reiterated injections.

"For many years past the Typhus of the Connecticut River Valley has been attended with more syncope than had been witnessed in earlier times; hence, the teachers of medicine treat of it as having two or three varieties; the principal of which are the *Typhus Syncopales*, and *Typhus Malignus*, the latter variety may perhaps be subdivided into Mitior and Gravior, as it appears in the Valley of the Monongahela River."

The majority of American authors, and medical men, after close examination, have adopted the opinions of the French School, among the most prominent of whom we may mention, Drs. Wood, Dunglison, Bartlet, Mitchell, Dickson, Drake, Gerhard, &c. who consider the two forms of fever distinct and dependent on different remote causes.

We are aware that we assume our position contrary to the voice of many of our old and very respectable practitioners, who have met with cases which they deemed proper to denominate Typhus in former years, but who seldom meet with them now. These persons are extremely tenacious of early taught doctrines, and are as unwilling to give them up before the rise of others even more plausible. In older time, they called no disease Enteric or Typhoid, but all such affections were known as Typhus. We may appear to those persons as presumptuous and foolishly dogmatical, but we appeal to them to demonstrate the differential diagnosis of the old Typhus and our Typhoid.

The same causes existed in olden time, as now operate in producing disease, and why had not we then Typhoid? It was because the differential diagnosis was not made out; all these forms were known as Typhus. We scarcely ever hear now of any one calling fever Typhus, who believe the two fevers different; and if such be the case, can it rationally be contended that so sudden a change has come over the cause of fever as to give rise

to a new fever, and annihilate the old? But few regard Enteric fever as contagious, and all agree that Typhus or Ship fever is the effect of contagion, and consequently the two diseases are the result of different causes. Typhus now being very rare, if ever, and Enteric frequent, the causes remaining the same, the material for contagion being wanting; and consequently, we cannot have Typhus, until its cause has an existence, which cannot well be, unless the materials for contagion, in the form of ill ventilation, crowded houses, bad habits, &c. are more abundant than in former days or the present time. We now approach the most important portion of our subject, viz: the treatment of Enteric fever.

As in all affections, we must here predicate our mode of treatment on our knowledge of the pathological lesion; and the more correct this knowledge, the more successful will be the results of the therapeutic agents in removing the disease.

We feel satisfied, that in Enteric fever, the lesion consists in a low sub-acute inflammation of the mucous lining of a certain portion of the ileum, involving the agminated glands of Peyer, the solitary mucous follicles and mesentery glands. We base this opinion on the following considerations, in the absence of the more sure conclusions drawn from *post mortem* examinations of which the rural practitioner is mostly deprived, from superstitious and misconceived notions of the people in common.

1. The state of the circulation as indicated by the pulse, shows an excited condition of some part or parts, which is readily located by the tenderness on pressure of the right iliac region, and tympanitis of the abdomen.

2. Diarrhoea and the condition of the tongue point us to some derangement of the alimentary canal.

3. In fatal cases of simple Enteric fever death results frequently, if not always from enteritis, peritonitis or perforation of the bowels.

4. Autopsies as first pursued by M. Louis, and confirmed by Messrs. Gerhard, Jackson, Bartlet, and others, of this country, have proven conclusively that such lesions do exist.

5. Whether these lesions be primary or secondary, it is a fact, that just in proportion as these lesions are removed, the fever yields and the patient becomes convalescent.

The treatment we have adopted, is very simple but very satisfactory in its results. The disordered digestive organs must be corrected with calomel, etc. and then the system being free from complications, we can rely with almost absolute safety on blisters to the right iliac and epigastric regions, in conjunction with the internal use of the nitrate of silver in $\frac{1}{4}$ gr. doses, in pill form, every four or five hours, to be continued until the tongue becomes moist, and assumes its natural appearance, and the tenderness and tympanitis of the abdomen ceases.

If the diarrhoea be severe it can be checked for the time with some mild astringent, until the nitrate of silver has produced a decided effect on the local lesion, when it will cease. If congestion of the brain exist,

which often occurs, it should be remedied by small doses of *Digitalis* in combination with nitre, and the local application of iced water, blisters to the nape of the neck, sinapisms to the extremities, exclusion of light, &c. and any other complications which may arise, are to be corrected upon general principles; but whatever may occur, still continue the use of the nitrate of silver, so that when the complications are removed, the fever instead of having gained ground, will have improved or yielded. Many medical men in the Valley use nitrate of silver, but delay its use until the second or third week. We have cut short many cases by its early administration, and our almost universal success warrant us in giving it, thus administered, our highest commendation. Prof. Mitchell, of Jefferson Med. School of Philadelphia, was first to apply this remedy, and thus conferred a lasting benefit on the human family, which none can fully appreciate, save those who have by its use been saved from a long and severe attack of fever.

This agent seems to possess almost a specific influence over the local lesion in Enteric fever; in what way it exerts that influence, we are not prepared to assert. Whenever we find the tongue cleans off in flakes, and presents a silvery aspect, we can say to the patient with almost absolute certainty, you will recover, unless some complication arises of which we are not aware. Oil of turpentine has been used by some of our practitioners with success, as recommended by Dr. Wood; we have never given it a trial owing to our unbounded confidence in the nitrate of silver.

When the local lesion seems healed, and the tongue clean and moist, with no disposition on the part of the patient to take nourishment, small doses of Sulp. Quinia, and riding in the open air in a carriage, even should the patient be unable to walk, will be productive of very salutary results. Where stimulants are required, ammonia appears to answer the purpose; but in the great majority of cases there is no occasion for any stimulation; since generally, as soon as the disease has yielded to the above course of treatment, the appetite returns, and food answers all the indications. Our experience has satisfied us, that stimulants in the form of brandy are rarely to be resorted to; for whenever such a stimulant is required, the vital powers are too far gone; wine whey answers a much better purpose. We presume the stimulant course adopted by some, arises too frequently from wrong views of the pathology of the disease. We gave such a mode a fair trial in our first outset in practice, but soon found it unsatisfactory to ourselves, and not sufficiently successful for the benefit of our patients.

During the year 1853, we have treated, by the nitrate of silver mode, about eighty cases of enteric fever, and lost only two cases by death, and one of them was a lady of seventy years of age, who had long labored under severe anasarca, and which ultimately was the cause of her death, and not the effects of the fever. Our success in former years has been about the same; which renders the mortality in our view small, and deprives that form of disease of all that horror which appalled the people at its outbreak.

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